

CLASSENS.ST25  
SEQUENCE LISTING

<110> CLAESSENS, JOHANNES AJ  
WALTER, FUCHS

<120> RECOMBINANT INFECTIOUS LARYNGOTRACHEITIS VIRUS VACCINE

<130> 2001001US

<140> 10/TBA

<141> 2002-03-15

<150> EP012009759

<151> 2001-03-15

<160> 2

<170> PatentIn version 3.1

<210> 1

<211> 1711

<212> DNA

<213> AVIAN INFLUENZA VIRUS

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<222> (11)..(1705)

<223> ISOLATE A/ITALY/445/99 (H7/N1)

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10

att ccg aca agt gca gac aaa atc tgc ctt ggg cat cat gcc gtg tca  
97

Ile Pro Thr Ser Ala Asp Lys Ile Cys Leu Gly His His Ala Val Ser

15

20

25

aac ggg act aaa gta aac aca tta act gaa aga gga gtg gaa gtc gtt  
45

1

Asn Gly Thr Lys Val Asn Thr Leu Thr Glu Arg Gly Val Glu Val Val

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aat gca act gaa acg gtg gaa cga aca aac gtc ccc agg atc tgc tca				1
93 Asn Ala Thr Glu Thr Val Glu Arg Thr Asn Val Pro Arg Ile Cys Ser				
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aaa ggg aaa agg aca gtt gac ctc ggt caa tgt gga ctt ctg gga aca				2
41 Lys Gly Lys Arg Thr Val Asp Leu Gly Gln Cys Gly Leu Leu Gly Thr				
	65	70	75	
atc act ggg cca ccc caa tgt gac cag ttc cta gaa ttt tca gcc gat				2
89 Ile Thr Gly Pro Pro Gln Cys Asp Gln Phe Leu Glu Phe Ser Ala Asp				
	80	85	90	
cta att att gag agg cga gaa gga agt gat gtc tgt tat cct ggg aaa				3
37 Leu Ile Ile Glu Arg Arg Glu Gly Ser Asp Val Cys Tyr Pro Gly Lys				
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ttc gtg aat gaa gaa gct ctg agg caa att ctc agg gag tca ggc gga				3
85 Phe Val Asn Glu Glu Ala Leu Arg Gln Ile Leu Arg Glu Ser Gly Gly				
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att gac aag gag gca atg gga ttc aca tac agc gga ata aga act aat				4
33 Ile Asp Lys Glu Ala Met Gly Phe Thr Tyr Ser Gly Ile Arg Thr Asn				
	130	135	140	
gga aca acc agt aca tgt agg aga tca gga tct tca ttc tat gca gag				4
81				

## CLASSENS.ST25

Gly Thr Thr Ser Thr Cys Arg Arg Ser Gly Ser Ser Phe Tyr Ala Glu

145

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atg aaa tgg ctc ctg tca aac aca gac aat gct gct ttc ccg cag atg 5

29

Met Lys Trp Leu Leu Ser Asn Thr Asp Asn Ala Ala Phe Pro Gln Met

160

165

170

act aag tca tac aaa aac aca agg aaa gac cca gct ctg ata ata tgg 5

77

Thr Lys Ser Tyr Lys Asn Thr Arg Lys Asp Pro Ala Leu Ile Ile Trp

175

180

185

ggg atc cac cat tcc gga tca act aca gaa cag acc aag cta tat ggg 6

25

Gly Ile His His Ser Gly Ser Thr Thr Glu Gln Thr Lys Leu Tyr Gly

190

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200

205

agt gga aac aaa ctg ata aca gtt ggg agt tct aat tac caa cag tcc 6

73

Ser Gly Asn Lys Leu Ile Thr Val Gly Ser Ser Asn Tyr Gln Gln Ser

210

215

220

ttt gta ccg agt cca gga gag aga cca caa gtg aat ggc caa tct gga 7

21

Phe Val Pro Ser Pro Gly Glu Arg Pro Gln Val Asn Gly Gln Ser Gly

225

230

235

aga att gac ttt cat tgg ctg atg cta aac ccc aat gac aca gtc act 7

69

Arg Ile Asp Phe His Trp Leu Met Leu Asn Pro Asn Asp Thr Val Thr

240

245

250

ttc agt ttc aat ggg gcc ttc ata gct cca gac cgt gca agt ttt ctg 8

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17	Phe Ser Phe Asn Gly Ala Phe Ile Ala Pro Asp Arg Ala Ser Phe Leu	
	255	260 265
aga ggg aag tct atg ggg att cag agt gga gta cag gtt gat gcc aat	8	
65	Arg Gly Lys Ser Met Gly Ile Gln Ser Gly Val Gln Val Asp Ala Asn	
270	275	280 285
tgt gaa gga gat tgc tat cac agt gga ggg aca ata ata agt aat ttg	9	
13	Cys Glu Gly Asp Cys Tyr His Ser Gly Gly Thr Ile Ile Ser Asn Leu	
	290	295 300
ccc ttt cag aac ata aat agc agg gca gta ggg aaa tgt ccg aga tat	9	
61	Pro Phe Gln Asn Ile Asn Ser Arg Ala Val Gly Lys Cys Pro Arg Tyr	
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gtt aag caa gag agt ctg ctg ctg gca aca ggg atg aag aat gtt ccc	10	
09	Val Lys Gln Glu Ser Leu Leu Leu Ala Thr Gly Met Lys Asn Val Pro	
	320	325 330
gaa att cca aaa gga tcg cgt gtg agg aga ggc cta ttt ggt gct ata	10	
57	Glu Ile Pro Lys Gly Ser Arg Val Arg Arg Gly Leu Phe Gly Ala Ile	
	335	340 345
gcg ggt ttc att gaa aat gga tgg gaa ggt ctg att gat ggg tgg tat	11	
05	Ala Gly Phe Ile Glu Asn Gly Trp Glu Gly Leu Ile Asp Gly Trp Tyr	
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ggc ttc agg cat caa aat gca caa gga gag gga act gct gca gat tac 11  
53

Gly Phe Arg His Gln Asn Ala Gln Gly Glu Gly Thr Ala Ala Asp Tyr

370

375

380

aaa agc acc caa tca gca att gat caa gta aca gga aaa ttg aac cgg 12  
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Lys Ser Thr Gln Ser Ala Ile Asp Gln Val Thr Gly Lys Leu Asn Arg

385

390

395

ctt ata gaa aaa act aac caa caa ttt gag tta ata gac aat gaa ttc 12  
49

Leu Ile Glu Lys Thr Asn Gln Gln Phe Glu Leu Ile Asp Asn Glu Phe

400

405

410

act gag gtt gaa aag caa att ggc aat gtg ata aat tgg acc aga gat 12  
97

Thr Glu Val Glu Lys Gln Ile Gly Asn Val Ile Asn Trp Thr Arg Asp

415

420

425

tcc atg aca gaa gtg tgg tcc tat aac gct gaa ctc ttg gta gca atg 13  
45

Ser Met Thr Glu Val Trp Ser Tyr Asn Ala Glu Leu Leu Val Ala Met

430

435

440

445

gag aac cag cat aca att gat ctg acc gac tca gaa atg aac aaa cta 13  
93

Glu Asn Gln His Thr Ile Asp Leu Thr Asp Ser Glu Met Asn Lys Leu

450

455

460

tac gaa cga gtg aag aga cta ctg aga gag aat gct gaa gaa gat ggc 14  
41

Tyr Glu Arg Val Lys Arg Leu Leu Arg Glu Asn Ala Glu Glu Asp Gly

465

470

475

CLASSENS.ST25

act ggt tgc ttc gaa ata ttt cac aag tgt gat gac gat tgt atg gcc 14  
89

Thr Gly Cys Phe Glu Ile Phe His Lys Cys Asp Asp Asp Cys Met Ala

480

485

490

agt att aga aac aac aca tat gat cac agc aag tac agg gaa gag gca 15  
37

Ser Ile Arg Asn Asn Thr Tyr Asp His Ser Lys Tyr Arg Glu Glu Ala

495

500

505

atg caa aat aga ata cag att gac cca gtc aaa cta agc agc ggc tac 15  
85

Met Gln Asn Arg Ile Gln Ile Asp Pro Val Lys Leu Ser Ser Gly Tyr

510

515

520

525

aaa gat gtg ata ctt tgg ttt agc ttc ggg gca tca tgt ttc ata ctt 16  
33

Lys Asp Val Ile Leu Trp Phe Ser Phe Gly Ala Ser Cys Phe Ile Leu

530

535

540

ctg gcc att gca atg ggc ctt gtc ttc ata tgt gtg aga aat gga aac 16  
81

Leu Ala Ile Ala Met Gly Leu Val Phe Ile Cys Val Arg Asn Gly Asn

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atg cgg tgc act att tgt ata taa gtttgg 17  
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Met Arg Cys Thr Ile Cys Ile

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<211> 564

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<213> AVIAN INFLUENZA VIRUS

CLASSENS.ST25

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35 40 45

Glu Thr Val Glu Arg Thr Asn Val Pro Arg Ile Cys Ser Lys Gly Lys  
50 55 60

Arg Thr Val Asp Leu Gly Gln Cys Gly Leu Leu Gly Thr Ile Thr Gly  
65 70 75 80

Pro Pro Gln Cys Asp Gln Phe Leu Glu Phe Ser Ala Asp Leu Ile Ile  
85 90 95

Glu Arg Arg Glu Gly Ser Asp Val Cys Tyr Pro Gly Lys Phe Val Asn  
100 105 110

Glu Glu Ala Leu Arg Gln Ile Leu Arg Glu Ser Gly Gly Ile Asp Lys  
115 120 125

Glu Ala Met Gly Phe Thr Tyr Ser Gly Ile Arg Thr Asn Gly Thr Thr  
130 135 140

Ser Thr Cys Arg Arg Ser Gly Ser Ser Phe Tyr Ala Glu Met Lys Trp  
145 150 155 160

Leu Leu Ser Asn Thr Asp Asn Ala Ala Phe Pro Gln Met Thr Lys Ser  
165 170 175

Tyr Lys Asn Thr Arg Lys Asp Pro Ala Leu Ile Ile Trp Gly Ile His

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180

185

190

His Ser Gly Ser Thr Thr Glu Gln Thr Lys Leu Tyr Gly Ser Gly Asn  
 195 200 205

Lys Leu Ile Thr Val Gly Ser Ser Asn Tyr Gln Gln Ser Phe Val Pro  
 210 215 220

Ser Pro Gly Glu Arg Pro Gln Val Asn Gly Gln Ser Gly Arg Ile Asp  
 225 230 235 240

Phe His Trp Leu Met Leu Asn Pro Asn Asp Thr Val Thr Phe Ser Phe  
 245 250 255

Asn Gly Ala Phe Ile Ala Pro Asp Arg Ala Ser Phe Leu Arg Gly Lys  
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Ser Met Gly Ile Gln Ser Gly Val Gln Val Asp Ala Asn Cys Glu Gly  
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Asp Cys Tyr His Ser Gly Gly Thr Ile Ile Ser Asn Leu Pro Phe Gln  
 290 295 300

Asn Ile Asn Ser Arg Ala Val Gly Lys Cys Pro Arg Tyr Val Lys Gln  
 305 310 315 320

Glu Ser Leu Leu Leu Ala Thr Gly Met Lys Asn Val Pro Glu Ile Pro  
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Lys Gly Ser Arg Val Arg Arg Gly Leu Phe Gly Ala Ile Ala Gly Phe  
 340 345 350

Ile Glu Asn Gly Trp Glu Gly Leu Ile Asp Gly Trp Tyr Gly Phe Arg  
 355 360 365

His Gln Asn Ala Gln Gly Glu Gly Thr Ala Ala Asp Tyr Lys Ser Thr



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370

375

380

Gln Ser Ala Ile Asp Gln Val Thr Gly Lys Leu Asn Arg Leu Ile Glu  
 385 390 395 400

Lys Thr Asn Gln Gln Phe Glu Leu Ile Asp Asn Glu Phe Thr Glu Val  
 405 410 415

Glu Lys Gln Ile Gly Asn Val Ile Asn Trp Thr Arg Asp Ser Met Thr  
 420 425 430

Glu Val Trp Ser Tyr Asn Ala Glu Leu Leu Val Ala Met Glu Asn Gln  
 435 440 445

His Thr Ile Asp Leu Thr Asp Ser Glu Met Asn Lys Leu Tyr Glu Arg  
 450 455 460

Val Lys Arg Leu Leu Arg Glu Asn Ala Glu Glu Asp Gly Thr Gly Cys  
 465 470 475 480

Phe Glu Ile Phe His Lys Cys Asp Asp Asp Cys Met Ala Ser Ile Arg  
 485 490 495

Asn Asn Thr Tyr Asp His Ser Lys Tyr Arg Glu Glu Ala Met Gln Asn  
 500 505 510

Arg Ile Gln Ile Asp Pro Val Lys Leu Ser Ser Gly Tyr Lys Asp Val  
 515 520 525

Ile Leu Trp Phe Ser Phe Gly Ala Ser Cys Phe Ile Leu Leu Ala Ile  
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Ala Met Gly Leu Val Phe Ile Cys Val Arg Asn Gly Asn Met Arg Cys  
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Thr Ile Cys Ile

CLASSENS.ST25

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## SEQUENCE LISTING

<110> AKZO Nobel NV  
 <120> Recombinant infectious laryngotracheitis virus vaccine  
 <160> 2  
 <170> PatentIn version 3.1

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Ile Pro Thr Ser Ala Asp Lys Ile Cys Leu Gly His His Ala Val Ser	
15 20 25	
aac ggg act aaa gta aac aca tta act gaa aga gga gtg gaa gtc gtt	145
Asn Gly Thr Lys Val Asn Thr Leu Thr Glu Arg Gly Val Glu Val Val	
30 35 40 45	

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Asn Ala Thr Glu Thr Val Glu Arg Thr Asn Val Pro Arg Ile Cys Ser	
50 55 60	
aaa ggg aaa agg aca gtt gac ctc ggt caa tgt gga ctt ctg gga aca	241
Lys Gly Lys Arg Thr Val Asp Leu Gly Gln Cys Gly Leu Leu Gly Thr	
65 70 75	
atc act ggg cca ccc caa tgt gac cag ttc cta gaa ttt tca gcc gat	289
Ile Thr Gly Pro Pro Gln Cys Asp Gln Phe Leu Glu Phe Ser Ala Asp	
80 85 90	
cta att att gag agg cga gaa gga agt gat gtc tgt tat cct ggg aaa	337
Leu Ile Ile Glu Arg Arg Glu Gly Ser Asp Val Cys Tyr Pro Gly Lys	
95 100 105	
ttc gtg aat gaa gaa gct ctg agg caa att ctc agg gag tca ggc gga	385
Phe Val Asn Glu Glu Ala Leu Arg Gln Ile Leu Arg Glu Ser Gly Gly	
110 115 120 125	
att gac aag gag gca atg gga ttc aca tac agc gga ata aga act aat	433
Ile Asp Lys Glu Ala Met Gly Phe Thr Tyr Ser Gly Ile Arg Thr Asn	
130 135 140	
gga aca acc agt aca tgt agg aga tca gga tct tca ttc tat gca gag	481
Gly Thr Thr Ser Thr Cys Arg Arg Ser Gly Ser Ser Phe Tyr Ala Glu	
145 150 155	
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Met Lys Trp Leu Leu Ser Asn Thr Asp Asn Ala Ala Phe Pro Gln Met	
160 165 170	
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Thr Lys Ser Tyr Lys Asn Thr Arg Lys Asp Pro Ala Leu Ile Ile Trp	
175 180 185	

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 Gly Ile His His Ser Gly Ser Thr Thr Glu Gln Thr Lys Leu Tyr Gly  
 190 195 200 205

agt gga aac aaa ctg ata aca gtt ggg agt tct aat tac caa cag tcc 673  
 Ser Gly Asn Lys Leu Ile Thr Val Gly Ser Ser Asn Tyr Gln Gln Ser  
 210 215 220

ttt gta ccg agt cca gga gag aga cca caa gtg aat ggc caa tct gga 721  
 Phe Val Pro Ser Pro Gly Glu Arg Pro Gln Val Asn Gly Gln Ser Gly  
 225 230 235

aga att gac ttt cat tgg ctg atg cta aac ccc aat gac aca gtc act 769  
 Arg Ile Asp Phe His Trp Leu Met Leu Asn Pro Asn Asp Thr Val Thr  
 240 245 250

ttc agt ttc aat ggg gcc ttc ata gct cca gac cgt gca agt ttt ctg 817  
 Phe Ser Phe Asn Gly Ala Phe Ile Ala Pro Asp Arg Ala Ser Phe Leu  
 255 260 265

aga ggg aag tct atg ggg att cag agt gga gta cag gtt gat gcc aat 865  
 Arg Gly Lys Ser Met Gly Ile Gln Ser Gly Val Gln Val Asp Ala Asn  
 270 275 280 285

tgt gaa gga gat tgc tat cac agt gga ggg aca ata ata agt aat ttg 913  
 Cys Glu Gly Asp Cys Tyr His Ser Gly Gly Thr Ile Ile Ser Asn Leu  
 290 295 300

ccc ttt cag aac ata aat agc agg gca gta ggg aaa tgt ccg aga tat 961  
 Pro Phe Gln Asn Ile Asn Ser Arg Ala Val Gly Lys Cys Pro Arg Tyr  
 305 310 315

gtt aag caa gag agt ctg ctg ctg gca aca ggg atg aag aat gtt ccc 1009  
 Val Lys Gln Glu Ser Leu Leu Leu Ala Thr Gly Met Lys Asn Val Pro  
 320 325 330

gaa att cca aaa gga tcg cgt gtg agg aga ggc cta ttt ggt gct ata 1057  
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gcg ggt ttc att gaa aat gga tgg gaa ggt ctg att gat ggg tgg tat 1105  
 Ala Gly Phe Ile Glu Asn Gly Trp Glu Gly Leu Ile Asp Gly Trp Tyr  
 350 355 360 365

ggc ttc agg cat caa aat gca caa gga gag gga act gct gca gat tac 1153  
 Gly Phe Arg His Gln Asn Ala Gln Gly Glu Gly Thr Ala Ala Asp Tyr  
 370 375 380

aaa agc acc caa tca gca att gat caa gta aca gga aaa ttg aac cgg 1201  
 Lys Ser Thr Gln Ser Ala Ile Asp Gln Val Thr Gly Lys Leu Asn Arg  
 385 390 395

ctt ata gaa aaa act aac caa caa ttt gag tta ata gac aat gaa ttc 1249  
 Leu Ile Glu Lys Thr Asn Gln Gln Phe Glu Leu Ile Asp Asn Glu Phe  
 400 405 410

act gag gtt gaa aag caa att ggc aat gtg ata aat tgg acc aga gat 1297  
 Thr Glu Val Glu Lys Gln Ile Gly Asn Val Ile Asn Trp Thr Arg Asp  
 415 420 425

tcc atg aca gaa gtg tgg tcc tat aac gct gaa ctc ttg gta gca atg 1345  
 Ser Met Thr Glu Val Trp Ser Tyr Asn Ala Glu Leu Leu Val Ala Met  
 430 435 440 445

gag aac cag cat aca att gat ctg acc gac tca gaa atg aac aaa cta 1393  
 Glu Asn Gln His Thr Ile Asp Leu Thr Asp Ser Glu Met Asn Lys Leu  
 450 455 460

tac gaa cga gtg aag aga cta ctg aga gag aat gct gaa gaa gat ggc 1441  
 Tyr Glu Arg Val Lys Arg Leu Leu Arg Glu Asn Ala Glu Glu Asp Gly  
 465 470 475

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 Thr Gly Cys Phe Glu Ile Phe His Lys Cys Asp Asp Asp Cys Met Ala  
 480 485 490

agt att aga aac aac aca tat gat cac agc aag tac agg gaa gag gca 1537  
 Ser Ile Arg Asn Asn Thr Tyr Asp His Ser Lys Tyr Arg Glu Glu Ala  
 495 500 505

atg caa aat aga ata cag att gac cca gtc aaa cta agc agc ggc tac 1585  
 Met Gln Asn Arg Ile Gln Ile Asp Pro Val Lys Leu Ser Ser Gly Tyr  
 510 515 520 525

aaa gat gtg ata ctt tgg ttt agc ttc ggg gca tca tgt ttc ata ctt 1633  
 Lys Asp Val Ile Leu Trp Phe Ser Phe Gly Ala Ser Cys Phe Ile Leu  
 530 535 540

ctg gcc att gca atg ggc ctt gtc ttc ata tgt gtg aga aat gga aac 1681  
 Leu Ala Ile Ala Met Gly Leu Val Phe Ile Cys Val Arg Asn Gly Asn  
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<210> 2

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<212> PRT

<213> Avian influenza virus

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Lys Val Asn Thr Leu Thr Glu Arg Gly Val Glu Val Val Asn Ala Thr  
 35 40 45

Glu Thr Val Glu Arg Thr Asn Val Pro Arg Ile Cys Ser Lys Gly Lys  
 50 55 60

Arg Thr Val Asp Leu Gly Gln Cys Gly Leu Leu Gly Thr Ile Thr Gly  
 65 70 75 80

Pro Pro Gln Cys Asp Gln Phe Leu Glu Phe Ser Ala Asp Leu Ile Ile  
 85 90 95

Glu Arg Arg Glu Gly Ser Asp Val Cys Tyr Pro Gly Lys Phe Val Asn  
 100 105 110

Glu Glu Ala Leu Arg Gln Ile Leu Arg Glu Ser Gly Gly Ile Asp Lys  
 115 120 125

Glu Ala Met Gly Phe Thr Tyr Ser Gly Ile Arg Thr Asn Gly Thr Thr  
 130 135 140

Ser Thr Cys Arg Arg Ser Gly Ser Ser Phe Tyr Ala Glu Met Lys Trp  
 145 150 155 160

Leu Leu Ser Asn Thr Asp Asn Ala Ala Phe Pro Gln Met Thr Lys Ser  
 165 170 175

Tyr Lys Asn Thr Arg Lys Asp Pro Ala Leu Ile Ile Trp Gly Ile His  
 180 185 190

His Ser Gly Ser Thr Thr Glu Gln Thr Lys Leu Tyr Gly Ser Gly Asn  
 195 200 205



Lys Leu Ile Thr Val Gly Ser Ser Asn Tyr Gln Gln Ser Phe Val Pro  
 210 215 220

Ser Pro Gly Glu Arg Pro Gln Val Asn Gly Gln Ser Gly Arg Ile Asp  
 225 230 235 240

Phe His Trp Leu Met Leu Asn Pro Asn Asp Thr Val Thr Phe Ser Phe  
 245 250 255

Asn Gly Ala Phe Ile Ala Pro Asp Arg Ala Ser Phe Leu Arg Gly Lys  
 260 265 270

Ser Met Gly Ile Gln Ser Gly Val Gln Val Asp Ala Asn Cys Glu Gly  
 275 280 285

Asp Cys Tyr His Ser Gly Gly Thr Ile Ile Ser Asn Leu Pro Phe Gln  
 290 295 300

Asn Ile Asn Ser Arg Ala Val Gly Lys Cys Pro Arg Tyr Val Lys Gln  
 305 310 315 320

Glu Ser Leu Leu Leu Ala Thr Gly Met Lys Asn Val Pro Glu Ile Pro  
 325 330 335

Lys Gly Ser Arg Val Arg Arg Gly Leu Phe Gly Ala Ile Ala Gly Phe  
 340 345 350

Ile Glu Asn Gly Trp Glu Gly Leu Ile Asp Gly Trp Tyr Gly Phe Arg  
 355 360 365

His Gln Asn Ala Gln Gly Glu Gly Thr Ala Ala Asp Tyr Lys Ser Thr  
 370 375 380

Gln Ser Ala Ile Asp Gln Val Thr Gly Lys Leu Asn Arg Leu Ile Glu  
 385 390 395 400

Lys Thr Asn Gln Gln Phe Glu Leu Ile Asp Asn Glu Phe Thr Glu Val  
 405 410 415

Glu Lys Gln Ile Gly Asn Val Ile Asn Trp Thr Arg Asp Ser Met Thr  
 420 425 430

Glu Val Trp Ser Tyr Asn Ala Glu Leu Leu Val Ala Met Glu Asn Gln  
 435 440 445

His Thr Ile Asp Leu Thr Asp Ser Glu Met Asn Lys Leu Tyr Glu Arg  
 450 455 460

Val Lys Arg Leu Leu Arg Glu Asn Ala Glu Glu Asp Gly Thr Gly Cys  
 465 470 475 480

Phe Glu Ile Phe His Lys Cys Asp Asp Asp Cys Met Ala Ser Ile Arg  
 485 490 495

Asn Asn Thr Tyr Asp His Ser Lys Tyr Arg Glu Glu Ala Met Gln Asn  
 500 505 510

Arg Ile Gln Ile Asp Pro Val Lys Leu Ser Ser Gly Tyr Lys Asp Val  
 515 520 525

Ile Leu Trp Phe Ser Phe Gly Ala Ser Cys Phe Ile Leu Leu Ala Ile  
 530 535 540

Ala Met Gly Leu Val Phe Ile Cys Val Arg Asn Gly Asn Met Arg Cys  
 545 550 555 560

Thr Ile Cys Ile  
 564